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MOTOROLA MOBILITY, INC. 600 NORTH US HIGHWAY 45 W2-55BB LIBERTYVILLE, IL 60048-5343			EXAMINER CAMPBELL, MATTHEW T	
			ART UNIT 2465	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DOCKETING.MOBILITY@MOTOROLA.COM

Office Action Summary**Application No.**

10/596,793

Applicant(s)

JANNETEAU ET AL.

Examiner

MATTHEW CAMPBELL

Art Unit

2465

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1,2 and 4-21 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1,2 and 4-21 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date ____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

1. This office action is in response to the reply filed on 9-1-2011. Claims 1, 2 and 4-21 are presented, of which claim 1 is the independent.

Claim Rejections - 35 USC § 112

Applicant states that the rejection in view of Venaas should be withdrawn and provides the following argument:

Thus, in Venaas, it can be seen that the translation is applied on the MRP message that is received by the gateway, on an "incoming interface". In contrast, in the claim 1 invention, the translation is applied on the MRP message that is sent by the gateway, on an "outgoing router interface". Thus, Applicants submit that Venaas does not disclose the distinguishing feature of the translation being applied on the MRP message that is sent by the gateway, on an "outgoing router interface".
(Remarks, p. 7)

Examiner disagrees, because Venaas performs the translation on messages that, although received on an incoming interface, are sent on an outgoing interface (see §3, paragraph 2: the multicast packets are resent as IPv4 multicast [messages sent on outgoing interface]; §5.1, paragraph 1: join a.b.c.d using IGMP [signaling messages sent on outgoing interface]). Further, applicants own outgoing-translated messages are received on an incoming interface (see fig. 3: connection from LFR 1 to MSG [incoming interface]).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 11 and 18-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claim 11, "the MSG-enabled interface" and "said MSG-enabled interface" have no antecedent basis.

For claims 18, 19, 20 and 21, it is unclear the scope of "IPv4" MRP and "IPv6" MRP (see spec at pgpub ¶40: listed MRP protocols include DVMRP, MOSPF, PIM-SM, PIM-DM, CBT. No mention of "IPv4" MRP or "IPv6" MRP). For the purposes of examination they will be interpreted to mean any MRP.

4. The following is a quotation of the fourth paragraph of 35 U.S.C. 112:

Subject to the [fifth paragraph of 35 U.S.C. 112], a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

5. Claims 5, 7-9, 13 and 14 are rejected under 35 U.S.C. 112, 4th paragraph, as being of improper dependent form for failing to further limit the subject matter of the claim upon which it depends, or for failing to include all the limitations of the claim upon which it depends. The claims depend from claim 0, which was not set forth. For the purpose of examination, the previously filed claim dependencies will be used.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 6, 7, 11, 12, 15-18 and 21 rejected under 35 U.S.C. 102(b) as being anticipated by Venaas S., "An IPv4 - IPv6 multicast gateway", Internet Engineering Task Force Internet Draft: draft-venaas-mboned-v4v6mcastgw-00.txt, February 2003 (available ietf.org).

For claim 1, Venaas teaches a method of communicating traffic in a network, wherein the network comprises a Network Node (NN), a Router (MR) for forwarding traffic between the network and the Internet, and a Multicast Signaling Gateway (MSG) co-located with the Router (MR), the method comprising: communicating traffic, from a source to a group (G) of nodes that includes the Network Node (NN), using at least one multicast protocol (**§1, multicast gateway couples IPv6 and IPv4 hosts**); and translating, by the Multicast Signaling Gateway (MSG) on an outgoing router interface, signaling messages of a multicast routing protocol (MRP) into messages of a group membership protocol (GMP) (**§5.1 ¶1, receive PIM join when IPv6 node joins, and send IGMP join to corresponding IPv4 node**).

For claim 6, Venaas teaches A method as claimed in claim 1, wherein said Multicast Signaling Gateway (MSG) operating on said interface determines whether said signaling messages contain an identification of a target multicast Group (G) and translates the target multicast group identification into group membership protocol (GMP) (§5.1, **An IPv6 host joins the group FFxx:<blah>:a.b.c.d, gateway receives PIM join and joins a.b.c.d using IGMP [translates the target multicast group identification into group membership protocol]**).

For claim 7, Venaas teaches A method as claimed in claim 6, wherein said Multicast Signaling Gateway (MSG) operating on said interface determines whether said signaling messages contain an address of a target multicast group source (S) and translates the target source address into group membership protocol (GMP) (**Appendix B ¶3, Possible enhancements include Source Specific Multicast (SSM) which allows IPv6 hosts to join specific IPv4 sources [target multicast group source (S)]; §3, The gateway makes use of PIM sparse mode [PIM-SM]; RFC 2362 [PIM-SM] at §3.2 and §4.5, PIM join message includes a join list containing a set of source addresses**).

For claim 11, Venaas teaches A method as claimed in claim 1, wherein multicast packets from a source external to said network to which said network is subscribed are multicast-routed within said network according to a local multicast forwarding table of said router (MR) (§5.1 ¶2, **When the gateway receives a multicast packet for a.b.c.d**

it prepends the /96 prefix to form the IPv6 address FFxx:<blah>:a.b.c.d. If the gateway has outgoing interfaces for this group, it will send an IPv6 packet to the same interfaces to which it would have forwarded an IPv6 packet for the group [multicast-routed within said network according to a local multicast forwarding table of said router]).

For claim 12, Venaas teaches A method as claimed in claim 1, wherein said Multicast Signaling Gateway (MSG) uses a service interface as provided by the GMP protocol to generate the GMP messages, and thus to enable and disable reception of packets sent to specific IP multicast addresses by specific sources (**§5.1, The gateway joins a.b.c.d using IGMP [service interface provided by GMP protocol], and stays joined as long as it has state for the group [enable and disable reception of packets sent to specific IP multicast addresses via corresponding join and prune messages]; also Appendix B ¶3, Possible enhancements include Source Specific Multicast (SSM) which allows IPv6 hosts to join specific IPv4 sources).**

For claim 15, Venaas teaches A method as claimed in claim 1, wherein said Multicast Signaling Gateway (MSG) detects Multicast Routing Protocol (MRP) messages by monitoring packets sent over the outgoing router interface (**§5.1 ¶1, receive PIM join when IPv6 node joins and send outgoing IGMP join [detect MRP messages by monitoring outgoing packets]).**

For claim 16, Venaas teaches A method as claimed in claim 1, wherein said Multicast Signaling Gateway (MSG) is embedded within an extension of a multicast routing protocol (MRP) implementation **(Appendix B ¶2, One could possibly let the gateway be an IPv4 PIM router [extension of a multicast routing protocol (MRP) implementation])**.

For claim 17, Venaas teaches A method as claimed in claim 1, wherein said Multicast Signaling Gateway (MSG) translates multicast packets together with unicast source addresses and multicast destination addresses of multicast packets between IPv4 and IPv6 protocols **(see §1 ¶2, gateway placed at the border between IPv6-only and IPv4-only networks to allow multicast access between them [translates multicast packets together with unicast source addresses and multicast destination addresses of multicast packets between IPv4 and IPv6 protocols])**.

For claim 18, Venaas teaches A method as claimed in claim 1, wherein said Multicast Signaling Gateway (MSG) translates MRP messages into IPv4 Internet Group Management Protocol (IGMP) messages **(§5.1 ¶1, receive PIM join when IPv6 node joins, and send IGMP join to corresponding IPv4 node [translates MRP messages into IPv4 Internet Group Management Protocol (IGMP) messages])**.

For claim 21, Venaas teaches A method as claimed in claim 1, wherein said Multicast Signaling Gateway (MSG) translates MRP messages into IPv4 GMP

messages and enables IPv6 nodes to receive multicast packets from IPv4 multicast groups and sources (§5.1 ¶1, receive PIM join when IPv6 node joins, and send IGMP join to corresponding IPv4 node [translates MRP messages into IPv4 GMP messages and enables IPv6 nodes to receive multicast packets from IPv4 multicast groups and sources]).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Venaas in view of Korus et al. (US 20030095523 A1).

For claim 2, Venaas does not teach A method as claimed in claim 1, wherein the Network Node (NN) is a Mobile Network Node (MNN) operating in a mobile network and

the router is a Mobile Router (MR) for forwarding traffic between a the mobile network and the Internet. However, Korus teaches wherein the Network Node (NN) is a Mobile Network Node (MNN) operating in a mobile network and the router is a Mobile Router (MR) for forwarding traffic between a the mobile network and the Internet (**see fig. 1, mobile networks 1 and 2 with mobile network nodes 102 and mobile routers 106 for forwarding traffic between the mobile networks and service networks 120, 130 and 140 [Network Node (NN) is a Mobile Network Node (MNN) operating in a mobile network and the router is a Mobile Router (MR) for forwarding traffic between a the mobile network and the Internet]**). It would have been obvious to one having ordinary skill in the art to modify Venaas with Korus teaching by implementing the multicast gateway in a mobile router in order to provide mobility.

For claim 10, Venaas does not teach A method as claimed in claim 1, wherein said Multicast Signaling Gateway (MSG) renews a GMP subscription for groups and associated source lists maintained for said interface in response to a change of topological attachment point of said interface. However, Korus from the same field of endeavor teaches wherein said Multicast Signaling Gateway (MSG) renews a GMP subscription for groups and associated source lists maintained for said interface in response to a change of topological attachment point of said interface (**see fig. 3 element 302-312 and ¶30-32, monitor IP network connectivity and join multicast group on behalf of mobile network in response to IP subnet connectivity changed [renews a GMP subscription for groups and associated source lists maintained**

for said interface in response to a change of topological attachment point)). It would have been obvious to one having ordinary skill in the art to modify Venaas with Korus's teaching in order to prevent multicast disconnection related to network movement.

11. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Venaas in view of Watanuki et al. (US 6853639 B1).

For claim 4, Venaas teaches A method as claimed in claim 1, wherein the Multicast Signaling Gateway (MSG) operating on said interface translates said signaling messages into group membership protocol messages (GMP) **(see base claim 1)**, but does not teach determining whether said signaling messages relate to the group join class ({JOIN}) or the group leave class ({LEAVE}). However, Watanuki teaches determining whether signaling messages relate to the group join class ({JOIN}) or the group leave class ({LEAVE}) **(fig. 20, table for conversion between routing protocol messages and GMRP Join and Leave classes [determining whether signaling messages relate to the group join class ({JOIN}) or the group leave class ({LEAVE})])**. It would have been obvious to one having ordinary skill in the art to modify Venaas with Watanuki's teaching in order to simplify translation.

For claim 5, Venaas in view of Watanuki teaches A method as claimed in claim 4, wherein said determination of the class is made using a class table which provide the

class as a function of the type of said signaling message (**Watanuki: fig. 20 [class table]**). Examiner maintains same analysis as that applied to the parent claim.

12. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Venaas in view of Kouvelas et al. (US 7644177 B2).

For claim 8, Venaas does not teach A method as claimed in claim 7, wherein said Multicast Signaling Gateway (MSG) maintains source lists that include, for each MSG enabled interface, said identifications of groups (G) associated with their respective multicast group source addresses identified by said signaling messages. However, Kouvelas from the same field of endeavor teaches wherein said Multicast Signaling Gateway (MSG) maintains source lists that include said identifications of groups (G) associated with their respective multicast group source addresses identified by said signaling messages (**fig. 3 and col. 7 line 65 - col. 8 line 6: Hanging from entry 306 [group address of 224.1.1.2] are two further entries 308 and 310. Entries 308 and 310 share the same group address as 306 but entry 308 specifies a source address of 10.1.1.3 while entry 310 specifies a source address of 20.1.3.5. For entries 308 and 310, all 64 bits of the concatenated source and group address are used for matching purposes []**). At the time of the invention it would have been obvious to one having ordinary skill in the art to modify Venaas to incorporate maintains source lists that include said identifications of groups (G) associated with their

respective multicast group source addresses as taught by Kouvelas. The motivation to do so would have been to keep the information organized for fast indexing and retrieval.

For claim 9, Venaas teaches A method as claimed in claim 8, wherein said Multicast Signaling Gateway (MSG) renews a GMP subscription for one of said groups (G) in response to a change in the list of said respective multicast group source addresses (**Appendix B ¶3, Possible enhancements include Source Specific Multicast (SSM) which allows IPv6 hosts to join specific IPv4 sources [target multicast group source (S)]; §5.1 ¶1, receive PIM join when IPv6 node joins, and send IGMP join to corresponding IPv4 node [in response to a host joining a new source of a group 'change in list of multicast group source addresses' the gateway sends an IGMP join based thereon]**).

13. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Venaas in view of Rinne et al. (US 7320029 B2).

For claim 13, Venaas does not teach A method as claimed in claim 12, wherein said Multicast Signaling Gateway (MSG) aggregates sources for a given multicast group (G) and uses a single socket identifier (sid) to pass the whole aggregation. However, Rinne from the same field of endeavor teaches using a single socket to pass a whole aggregation (**fig. 3a and col. 8 lines 33-48: In the example shown in FIG. 3a the third application 33 has a single data stream 33a for which purpose a single**

socket s1 is opened through the socket API 34 [single socket for whole third application]). At the time of the invention it would have been obvious to one having ordinary skill in the art to modify Venaas to incorporate aggregating sources for a given multicast group (G) and using a single socket identifier (sid) to pass the whole aggregation by implementing the single socket as taught by Rinne. The motivation to do so would have been to reduce processing overhead on the way of the gateway.

For claim 14, Venaas does not teach A method as claimed in claim 12, wherein said Multicast Signaling Gateway (MSG) uses different socket identifiers (target_sid) for respective targets (source S, multicast group G) derived from said signalling messages. However, Rinne from the same field of endeavor teaches using different sockets for respective targets (**fig. 3a and col. 8 lines 33-48: The second application 32, i.e. the ftp application, has opened two data streams, one 32b for ftp data and one 32a for ftp commands for which purpose there is opened two different sockets s2 and s3 [different sockets for respective targets]).** At the time of the invention it would have been obvious to one having ordinary skill in the art to modify Venaas to incorporate using different socket identifiers for respective targets by implementing the different sockets for respective targets as taught by Rinne. The motivation to do so would have been to reduce processing overhead on the way of the service interface.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW CAMPBELL whose telephone number is (571)270-3988. The examiner can normally be reached on Monday through Friday from 9:00am until 6:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 571-272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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